appropriate care when the blood-based EGFR mutation testing was used as an alternative test to tissue-based EGFR mutation testing alone (93% vs 90%, respectively). As a result of increased diagnostic yield, there was a 23% decrease in cost per NSCLC patient per month compared to tissue-based testing alone ($1,665 vs $1,265). Costs per NSCLC patient per month are similar when blood-based testing is used in place of CT scan for ongoing monitoring of tumor progression. **CONCLUSIONS:** The blood-based cobas® EGFR Mutation Test has advantages for patient outcomes when performed as an alternative test to tissue-based testing when tissue sample is not available or when used as an ongoing monitoring tool for tumor progression. By correctly identifying more patients for proper treatment, the blood-based test represents a good alternative to tissue-based testing for identification of EGFR mutations in locally advanced or metastatic NSCLC patients.

PMD24

**A MODEL TO EXPLORE THE POTENTIAL BUDGET IMPACT OF A NOVEL SCREENING TOOL FOR THE DETECTION OF SUBCLINICAL REJECTION AMONG KIDNEY TRANSPLANT PATIENTS**

Inocencio TJ[1], Jaglinski K[2], Uchida H[2], Hughes KE[1]
[1]*Avalere Health LLC, Washington, DC, USA,* [2]*Immucor, Inc., Waukesha, WI, USA*

**OBJECTIVES:** Advances in molecular diagnostics for the detection of disease can provide opportunities for healthcare providers to intervene earlier and subsequently, improve outcomes. Payers are increasingly focused on assessing the cost and overall value of such tools. The kSORT assay is a non-invasive test that can be used as a screening tool to detect subclinical rejection (SCR) among kidney transplant patients. The current standard of care may consist of routine screening for clinical acute rejection (AR) or the use of invasive surveillance biopsies to detect SCR through histologic diagnosis. Preliminary data show that the k-SORT assay performs as well as and potentially superior to biopsies for the detection of SCR and prediction of AR. The objective of this analysis is to evaluate the potential budget impact of the kSORT assay from a commercial payer perspective using a set of conservative assumptions. **METHODS:** A 2-year Markov model incorporating SCR, AR, and graft failure was developed to evaluate the budget impact from a U.S. commercial payer perspective of the k-SORT assay among patients with incident kidney transplants. Probabilities for progression were obtained by calibrating the values to correspond with reported prevalence rates of SCR and incidence rates of AR from published registry data. Costs were obtained through the peer-reviewed literature and sensitivity analyses were performed. **RESULTS:** Across a set of conservative assumptions, use of the kSORT assay may have a minimal budget impact (<$0.05) PMPM across most scenarios. Key value drivers include the frequency of monitoring, costs of the assay, and concurrent use of protocol biopsies with the assay. **CONCLUSIONS:** The use of k-SORT to detect SCR is likely to produce a minimal budget impact for commercial payers. Additional studies demonstrating the clinical performance of the assay compared to biopsies can help to provide further insight into the clinical and economic benefits.

PMD25

**BUDGET IMPACT AND COST- EFFECTIVENESS OF AN INNOVATIVE BLOOD GLUCOSE MEASUREMENT DEVICE USING PATTERN ALERT TECHNOLOGY IN INSULIN-TREATED DIABETICS IN THE UNITED STATES**

Krumreich J[1], Froehlich N[1], Schauf M[2], Drapkin J[2], Zoellner YF[3]
[1]*Econ-Epi, Wentorf/Hamburg, Germany,* [2]*Lifescan, a Johnson & Johnson company, Wayne, PA, USA,* [3]*Hamburg University of Applied Sciences, Hamburg, Germany*

**OBJECTIVES:** Hypoglycemic events (HEs) are important acute complications in patients with diabetes mellitus, especially insulin-treated. Severe HEs (sHEs) cause high treatment costs and have a major impact on patients' quality of life. A newly available, innovative blood glucose measurement device (IBGMD), using a technology identifying patterns of low blood glucose and alerting the patient about a potential sHE ("pattern alert technology", PAT), is studied to determine (i) the number of avoidable sHEs through deployment of IBGMD using PAT, compared to a conventional blood glucose measurement device (CBGMD), (ii) the IBGMD net cost, and (iii) its impact on overall management costs. **METHODS:** Values attached to epidemiologic, cost and behavioral input variables were taken from scientific literature and authoritative sources. A decision-analytic, one-year model comparing direct costs (payer perspective) and sHE outcomes between IBGMD and CBGMD was developed, and budget impact and cost-effectiveness calculations were performed, reflecting the US insulin-treated diabetic population. **RESULTS:** On an overall population level, in the base-case scenario (sHE incidence 8.99%, PAT compliance 90%), usage of the IBGMD could lead to an extra 92,181 avoided sHEs annually, compared to a CBGMD. Assuming price parity of test strips across both devices ($0.21/strip at Medicare price $10.40 per 50-unit pack), its implementation is cost-neutral. At an average treatment cost of $7,598 per single sHE, this would lead to overall net cost savings of over $700 million per year. In alternative scenarios, achievable savings range from $103.7 million to nearly $6.7 billion per year. In terms of incremental cost-effectiveness, IBGMD is considered dominant, as it features higher effectiveness (extra sHEs avoided) at lower overall costs compared to a CBGMD. **CONCLUSIONS:** An innovative blood glucose measurement device with pattern alert technology can avoid a sizeable number of sHEs and may lead to considerable cost savings, if implemented widely in the target population.

PMD26

**CLINICAL AND COST OUTCOMES FROM DIFFERENT HYALURONIC ACID TREATMENTS IN PATIENTS WITH KNEE OSTEOARTHRITIS**

Dasa V[1], DeKoven M[2], Lim S[3], Long K[4], Heeckt P[4]
[1]*Louisiana State University, New Orleans, LA, USA,* [2]*IMS Health, Fairfax, VA, USA,* [3]*Seikagaku Corporation, Tokyo, Japan,* [4]*Bioventus LLC, Durham, NC, USA*

**OBJECTIVES:** Intra-articular injection of hyaluronic acid (HA) for knee osteoarthritis (OA) effectively reduces pain and delays total knee replacement (TKR) surgery; however, little is known about relative differences in clinical and cost outcomes among different HA products. We aimed to compare disease-specific costs and risk of TKR among patients receiving different HA treatments in a commercially-insured cohort of patients with knee OA. **METHODS:** Retrospective analyses using IMS Health's PharMetrics Plus Health Plan Claims Database were conducted by identifying knee OA patients with claims indicating initiation of HA treatment at an index date during the selection period (2007-2010). Patients were required to be continuously enrolled in the health claims database from 12-months pre-index to 36-months post. A generalized linear model (GLM) with a gamma distribution and log-link function was used to model aggregate patient-based changes in disease-specific costs. A Cox proportional hazards model (PHM) was used to model risk of TKR. Both multivariate models included covariates such as age, gender, comorbidities, and pre-index healthcare costs. **RESULTS:** 50,389 patients with HA treatment for knee OA were identified. 18,217 (36.2%) patients received Supartz/Hyalgan (shared HCPCS code), 20,518 (40.7%) Synvisc, 6,263 (12.4%) Euflexxa, and 5,391 (10.7%) Orthovisc. Synvisc and Orthovisc patients showed more disease-specific costs compared to Supartz/Hyalgan (8.9% ($p<0.0001$) and 6.8% ($p=0.0048$) increase respectively). This implies that if users of Synvisc and Orthovisc with average disease-specific costs of $14,959 and $14,224 switch to Supartz/Hyalgan, they can save $1,223 and $906 over 3 years respectively. Hazard ratios showed a significantly higher risk of TKR for patients receiving Synvisc compared to Supartz/Hyalgan (6.9% increase in hazard ($p=0.0009$)). Patients treated with Supartz/Hyalgan, Euflexxa and Orthovisc had longer delays of TKR. **CONCLUSIONS:** Multivariate statistical modeling showed that Supartz/Hyalgan represents a cost-effective alternative for providers. Both HAs reduce disease-specific costs and delay TKR when compared to other products.

PMD27

**ECONOMIC VALUE OF PREVENTING CENTRAL VENOUS CATHETER SEPSIS INFECTIONS WITH EARLY CANNULATON ARTERIOVENOUS GRAFTS (ECAVGS) COMPARED TO NON-ECAVGS**

Mohr BA, Trovillion PJ
*W. L. Gore & Associates, Inc., Flagstaff, AZ, USA*

**OBJECTIVES:** Approximately 80% of US hemodialysis patients initiate dialysis with a central venous catheter (CVC) despite their high incidence of infections compared to other vascular access modalities (USRDS 2011). Early cannulation arteriovenous grafts (ecAVGs) can be cannulated within 24 hours of implantation thus minimizing the dependency on CVCs compared to non-ecAVGs. We compare CVC sepsis costs for patients implanted with ecAVGs to those with non-ecAVGs. **METHODS:** An economic model was estimated using the GORE® ACUSEAL Vascular Graft (GAVG) Clinical Study (Clinicaltrials.gov NCT01173718), clinical literature, and publicly available cost sources. The GAVG study was a prospective, multi-center, single-arm study to establish the safety and efficacy of the GAVG for use in hemodialysis access. The study collected data on the first three consecutive hemodialysis sessions, which is a surrogate endpoint for time to potential CVC removal. The median days to potential CVC removal was 15.5 compared to an average of 34 days for non-ecAVGs from Quinn (2009) and Shingarev et al. (2011). CVC sepsis rates of 2.32 per patient-year were obtained from the US Renal Data System (2011). The CVC sepsis hospitalization cost was calculated as $27,088 (2014 dollars) from HCUP NIS (2010). **RESULTS:** Assuming 100 patients in each group, the ecAVG group was estimated to have 9.9 CVC sepsis episodes compared to 21.6 in the non-ecAVG group, with estimated sepsis hospitalization costs of $268,171 versus $585,100, respectively, due to the extended time on the CVC. The ecAVG potentially reduces CVC sepsis episodes by 11.7 since it reduces the number of catheter-dependent days by 18.5 compared to the non-ecAVG. On a per patient basis, the estimated average CVC sepsis costs in the ecAVG group were $2,682/patient versus $5,851/patient in the non-ecAVG group, resulting in a cost savings of $3,189/patient. **CONCLUSIONS:** It is estimated ecAVGs reduce overall CVC sepsis costs compared to non-ecAVGs due to fewer CVC-dependent days.

PMD28

**ECONOMIC IMPACT OF OPEN MECHANICAL STAPLING VS. MANUAL SUTURING IN ILEOCOLIC ANASTOMOSIS IN MEXICAN PUBLIC HEALTHCARE INSTITUTIONS**

Zanela OO[1], Cabra HA[2], Sanchez D[1]
[1]*Johnson & Johnson Medical Mexico, MEXICO CITY, Mexico,* [2]*Johnson&Johnson Medical, Mexico city, Mexico*

**OBJECTIVES:** Manual suturing is currently used to perform ileocolic anastomosis in colorectal surgery. Because of its documented post-surgical complications shown in literature (anastomotic leaks and reoperations), alternative techniques such as mechanical stapling might yield clinical and economic benefits for hospitals. The objective of this study was to estimate the economic impact derived from the use of mechanical stapling and handsewn techniques in open ileocolic anastomoses from a Mexican public hospital perspective (IMSS). **METHODS:** An Excel-based decision tree model was used to compare clinical and economic outcomes of both anastomoses techniques. Data for anastomotic leak and reoperation rates for mechanical and handsewn suturing were taken from international published literature. Given procedure volume variability in comparable hospitals, base-case scenario assumed 100 annual procedures with each anastomosis technique. Considered complications were anastomotic leak (requiring readmission) and reoperation due to fistulization and anastomotic stricture. Stapler, cutter and traditional suture utilization patterns were based on expert opinions, while their unitary costs were provided by internal resources. Inflation-adjusted DRGs from IMSS´s second level hospitals were used as hospitalization, readmission and reoperation costs. Results are shown in 2015-adjusted USD; considered time horizon was <1 year, thus no discount rate for costs was necessary. **RESULTS:** Stapled colorectal anastomoses resulted in a significant reduction in anastomotic leaks and reoperations compared to handsewn technique. Net potential savings due to avoided readmissions and reoperations with mechanical stapler accounted for $32,422 and $197,992 respectively; net saving per patient was $1,784. **CONCLUSIONS:** The use of stapling devices to perform ileocolic anastomosis can yield potential clinical and economic benefits due to the reduction of readmission and reoperation rates. Local public healthcare institutions should consider the adoption of mechanical stapling techniques in colorectal surgery as it appears to be a cost saving alternative.